Tranexamic acid Hemostan

250 mg Capsule
(as Tranexamic acid Ph.Eur.)
Each hard gelatin HG no.1 Capsule for injection (MAY)
500 mg/5 ml(10 mg/ml) Solution for injection (MAY)

Antifibrinolytic

FORMULATIONS

Each capsule contains
Tranexamic acid..... 250 or 500 mg

Each 5 ml (1 Ampoule) of the Solution for injection contains
Tranexamic acid..... 100 mg

Each 10 ml (1 Vial) Solution for injection contains
Tranexamic acid..... 100 mg

PRODUCT DESCRIPTIONS

Tranexamic acid (manufactured by Ambernol Laboratories, Philippines)
Tranexamic acid 250 mg: Hard gelatin capsule with the cap and body coloured pale red and yellow respectively.

500 mg Capsule: Size 4/1 hard gelatin capsule with bright orange opaque cap and buff opaque body.

Tranexamic acid (manufactured by Ambernol Parenterals, Philippines)
100 mg/5 ml (10 mg/ml) Solution for injection: Clear colorless, sterile, non-pyrogenic solution contained in a 5 ml, clear ampoule.

100 mg/ml, (100 mg/10 ml) Solution for injection: Clear colorless, sterile, non-pyrogenic solution contained in a 10 ml, clear ampoule.

CLINICAL PHARMACOLOGY

PHARMACODYNAMICS

Tranexamic acid, a synthetic antifibrinolytic agent, it is a competitive inhibitor of plasminogen activation and at higher concentrations is a non-competitive inhibitor of plasmin.

Human plasminogen contains tightly binding sites that are important for interactions not only with activators but also with fibrin and alpha 2-antiplasmin. The binding of tranexamic acid to these sites is reversible. Only a few of the sites in a plasminogen molecule have low affinity.

Tranexamic acid almost completely blocks the interaction of plasminogen and the basic chain of plasmin with the lysine binding sites of plasminogen. Saturation of this binding site requires concentrations of tranexamic acid that are about 10 times the concentrations required to inhibit the activator. Although plasmin will bind to fibrin it is not able to fibrinolyse. In fibrin clots covered, when tranexamic acid blocks the binding sites of plasminogen, fibrinolysis is inhibited by plasmin.

Tranexamic acid is about 10 times more potent than epsilon-aminocaproic acid. Its concentration up to 10 mg per ml has been, like a histamine or platelet inhibitor, the antifibrinolytic activity of human plasma in vitro. Tranexamic acid in the dose of 10 mg per kg body weight administered intravenously to man produces a concentration of 10 mg and 1 mg per ml blood, prolongs thrombin time.

PHARMACOKINETICS

Oral Capsule and Solution for Injection (IM/IV)
Tranexamic acid is rapidly absorbed from the gastrointestinal tract.Peak plasma levels after oral administration of 1 g are reached in 3 hours and are about 8 mg/l (8 mcg/ml) after dosing. Bioavailability is about of 30 to 50%. Food intake does not influence absorption.

After intravenous (IM) administration of tranexamic acid, peak plasma levels and plasma concentration(CMAX) of 1.0 mg/ml(1 mg/ml) is attained approximately after 1 hour. Tranexamic acid is excreted in the urine, 90% of the dose being recovered in the first 24 hours. Only a small fraction is excreted in the faeces. Plasma half-life is about 2 hours.

Tranexamic acid is widely distributed in the body and has very low protein binding, i.e., 3% in plasma and 0% in cerebrospinal fluid. Tranexamic acid is excreted unchanged in urine. It does not bind to serum albumin.The initial volume of distribution is about 9 (0.2), 12 (0.3) and 16 (0.4) liters (L/kg) and the half-life is 2 (0.5), 3 (0.5) and 3 (0.5) hours after intravenous injection of 0.25, 0.5 and 1 g. The plasma clearance is approximately 110 (30) ml/min. Approximately 90 % of the dose is excreted unchanged in the urine during the first 24 hours. The renal clearance is approximately 70 (20) ml/min, indicating that tranexamic acid is eliminated by glomerular filtration.

Tranexamic acid crosses the placenta. The concentration in cord blood after IV injection of 10 mg/kg body weight is about 50% of the maximum concentration in maternal plasma. Tranexamic acid also passes into breast milk and has a low oral bioavailability in the baby. Tranexamic acid is distributed in the extracellular fluid and has a low protein binding. Bioavailability is about 30 % and 50 % after oral administration of 1 g and 0.5 g, respectively. Tranexamic acid is excreted unchanged in the urine. The elimination half-life is about 2 hours.

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INDICATIONS

INDICATIONS	RECOMMENDED TRANEXAMIC ACID ADULT DOSE
General Surgical Cases	**0.5 to 1 g/10 to 15 mg/kg body weight/ 6 every 6 to 12 hours** for the first days immediately after surgery; then, **0.25 to 0.5 g every 6 to 8 hours**
Conization	Before surgery, **1 g/ 10 mg/kg body weight**
Cervical Cancer	Before surgery, **0.5 g/ 10 mg/kg body weight** 2hrs. before surgery, 2hrs. interval, 3 doses
Cervical Cancer	Before surgery, **1 g/ 10 mg/kg body weight**
Prostatectomy	Before surgery, **1 g/ 10 mg/kg body weight** 60 before surgery, **1 g/ 10 mg/kg body weight** 60
Hemorrhagic Shock	Before surgery, **1 g/ 10 mg/kg body weight** 60
Postpartum Hemorrhage	Before surgery, **1 g/ 10 mg/kg body weight** 60
Conization of Cervix	Before surgery, **1 g/ 10 mg/kg body weight** 60
Cervical Cancer	Before surgery, **1 g/ 10 mg/kg body weight** 60
Hematuria	Before surgery, **1 g/ 10 mg/kg body weight** 60
Hereditary Angioneurotic Edema	**1 g/ 10 mg/kg body weight/ 6** every 6 to 12 hours for 5 days
Dental surgery in patients with Hemophilia	**0.5 to 1 g every 6 hours** the first injection given during the morning hour for the first three days after surgery, then orally, **1 to 1.5 g every 6 hours** for an additional 5 days, depending on the individual response

Dosage in children:

Tranexamic Acid Dosage
10 mg/kg body weight per dose for children **20 mg/kg body weight per dose** not to exceed 1 g per dose, every 6 to 12 hours for the first few days immediately after surgery, then every 6 to 8 hours depending on the indication

Dosage in renal insufficiency:

Serum creatinine (mg/dL)	Tranexamic Acid Dosage
1.4 to 2.8	10 mg/kg body weight every 24 hours; 10 mg/kg body weight every 48 hours
2.9 to 5.66	10 mg/kg body weight every 48 hours; 10 mg/kg body weight every 72 hours
> 5.66	10 mg/kg body weight every 72 hours; 10 mg/kg body weight every 96 hours

Oral Capsule

INDICATIONS	RECOMMENDED TRANEXAMIC ACID ADULT DOSE
BURSOLA	Dental Surgery Cases	0.5 to 1 g/10 to 15 mg/kg body weight/ 6 every 6 to 12 hours for the first few days immediately after surgery, then, **0.25 to 0.5 g every 6 to 8 hours**
BURSOLA	Prostatectomy	0.5 to 1 g/10 to 15 mg/kg body weight/ 6 every 6 to 12 hours for the first few days immediately after surgery, then, **0.25 to 0.5 g every 6 to 8 hours**
HEMATOLOGIC DISORDERS	Menorrhagia / Metrorrhagia	**1 g/ 10 mg/kg body weight/ 6** every 6 hours for 4 days
	Hereditary Angioneurotic Edema	**1 g/ 10 mg/kg body weight/ 6** every 6 hours for 5 days
HEMATOLOGIC DISORDERS	Epistaxis	**1 g/ 10 mg/kg body weight/ 6** every 6 hours for 4 days
HEMATOLOGIC DISORDERS	Gastrointestinal Hemorrhage	**1 g/ 10 mg/kg body weight/ 6** every 6 hours for 4 days
MEDICAL	Hematuria	**1 g/ 10 mg/kg body weight/ 6** every 6 to 12 hours for 4 days
	Hereditary Angioneurotic Edema	**1 g/ 10 mg/kg body weight/ 6** every 6 to 12 hours for 5 days
DENTAL	Dental surgery in patients with Hemophilia	**0.5 to 1 g every 6 hours** the first injection given during the morning hour for the first three days after surgery, then orally, **1 to 1.5 g every 6 hours** for an additional 5 days, depending on the individual response

Dosage in children:

10 mg/kg body weight per dose, two or three times a day, depending on the indication

Oral Capsule

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MEDICAL	Hematuria	**1 g/ 10 mg/kg body weight/ 6** every 6 to 12 hours for 4 days
	Hereditary Angioneurotic Edema	**1 g/ 10 mg/kg body weight/ 6** every 6 to 12 hours for 5 days
DENTAL	Dental surgery in patients with Hemophilia	Immediately before surgery, 10 mg/kg body weight/ 6 every 6 to 12 hours for 4 days
		After surgery, **Orally, 1 to 1.5 g/ 20 mg/kg body weight/ 6** every 6 hours for 5 days, depending on the individual response

Dosage in children:

10 mg/kg body weight per dose, two or three times a day, depending on the indication

Dosage in renal insufficiency:

Serum Creatinine (mg/dL)	Tranexamic Acid Dosage
1.4 to 2.8	10 mg/kg body weight every 24 hours; 10 mg/kg body weight every 48 hours
2.9 to 5.66	10 mg/kg body weight every 48 hours; 10 mg/kg body weight every 72 hours
> 5.66	10 mg/kg body weight every 72 hours; 10 mg/kg body weight every 96 hours

CONTRAINDICATIONS

- Hypersensitivity to tranexamic acid or any component of the product
- Active intravascular clotting, such as disseminated intravascular coagulation (DIC)
- Subarachnoid hemorrhage
- History of thromboses or thromboembolism (e.g., cerebral vein or artery occlusion)
- Acquired disturbances of color vision (dyschromatopsia) (see Precautions)
- Hematuria originating from the upper urinary tract (ureter, renal pelvis) (see Precautions)
- Patients receiving thrombin because of increased risk of thrombosis
- Patients receiving hormonal contraceptives because of increased risk of thrombosis
- Patients with subarachnoid hemorrhage, because cerebral edema and cerebral ischemia may occur as a result of cerebral vasospasm
- Patients with subarachnoid hemorrhage, since cerebral edema and cerebral infarction may be subsequently aroused as result

WARNINGS AND PRECAUTIONS

Thromboembolic Disorders
Venous and arterial thromboses or thromboembolism, cerebral edema and cerebral infarction have been observed in patients with subarachnoid hemorrhage treated with tranexamic acid. Patients with a high risk for thrombosis, thromboembolism or cerebral ischemia should be treated with tranexamic acid only if the benefits outweigh the risk of there is a strong medical indication and under strict medical supervision.

Use with Hormonal Contraceptives: Concomitant treatment with tranexamic acid is known to increase the risk of venous thromboembolism, as well as arterial thromboembolism. Therefore, the concomitant administration of tranexamic acid and hormonal contraceptives should be avoided. Women who are taking hormonal contraceptives may further accentuate this increased thrombotic risk. There are no data on the safety of tranexamic acid in women who are taking hormonal contraceptives. Women who are taking hormonal contraceptives should be informed of the risk of combining tranexamic acid, if there is a thrombotic risk, a drug-related event and the benefit of treatment should be carefully considered by the treating physician and patient.

Use with Factor IX Complex Concentrates or Anti-inhibitor Coagulant Complex: There are reports of thrombosis in patients receiving concomitant therapy with factor IX complex concentrates or anti-inhibitor coagulant complex and tranexamic acid.

Use with Urinary Tract Bleeding: Exercise caution when administering tranexamic acid to patients with hematuria. Clot retention may occur in the urinary tract. Use with caution in patients with upper urinary tract bleeding due to the potential for obstruction of the ureter by clots.

Renal Insufficiency
Dose should be adjusted in renal insufficiency because of the risk of drug accumulation.

Urinary tract obstruction due to clot formations in patients with severe bleeding from the urinary tract (see Precautions) can be prevented by bladder irrigation.

Treatment with tranexamic acid is not indicated in hematuria caused by diseases of the renal parenchyma in the absence of clots. Caution should be exercised in the use of tranexamic acid in patients with hematuria originating from the upper urinary tract.

Disseminated Intravascular Coagulation
Patients with disseminated intravascular coagulation who require treatment with tranexamic acid must be under the clinical supervision of a physician experienced in this disorder.

Extravascular Clots
Tranexamic acid should be given only to bleeding sites that are free of clots.

Subarachnoid Hemorrhage
Cerebral edema and cerebral infarction may be caused by tranexamic acid use in patients with subarachnoid hemorrhage.

Visual Disturbances
Tranexamic acid should be used with caution in patients with visual disturbances. Ophthalmological examinations should be carried out before, during and after long-term treatment with tranexamic acid. Visual disturbances, such as blurred vision, impaired color vision, scotoma, and rare reversible cases of blindness have been reported. Visual disturbances were also observed in animal studies. Ophthalmic examinations should be carried out before, during and after long-term treatment with tranexamic acid.

Use with Prothrombin Complex Concentrates or Anti-inhibitor Coagulant Complex: There are reports of thrombosis in patients receiving concomitant therapy with factor IX complex concentrates or anti-inhibitor coagulant complex and tranexamic acid.

Clotting Factor Complexes (e.g.,Factor IX complex concentrates or anti-inhibitor coagulant complex): Use with caution (see Interactions).

Factor Deficiency Status: Use with caution (see Interactions).

Surgical Procedure Activities: Concomitant therapy may decrease the efficacy of clotting factors and can be potentially dangerous.

Hypersensitivity
Simultaneous treatment with anticoagulants should be under the strict supervision of a physician.

Use with caution in patients with known hypersensitivity to tranexamic acid.

STATEMENT ON USAGE FOR HIGH RISK GROUPS

Pregnancy Pregnancy Category B There are no adequate and well controlled studies in pregnant women. However, tranexamic acid crosses the placenta and appears in breast milk in small amounts (see Clinical Pharmacology).

Lactation Tranexamic acid is present in breast milk at 1% of the corresponding serum level. Use in lactation is not harmful.

Elderly Since elderly patients may have reduced physiological function, careful observation is required during administration.

Children Safety has not been established in children, principally in both newborns.

ADVERSE EFFECTS

The most frequently reported adverse effects with tranexamic acid include gastrointestinal disturbances, such as nausea, vomiting, and diarrhea. Rare cases of severe skin reactions have also been reported.

Blood and lymphatic system disorders Anemia

Immune system disorders Hypersensitivity reactions including anaphylaxis, anaphylactoid shock, anaphylactoid reactions

Nervous system disorders Dizziness, headache, convulsion, dizziness, drowsiness, faintness, cerebral thrombosis, cerebral infarction, cerebral edema, subarachnoid hemorrhage, cerebral ischemia, cerebral vasospasm

Eye disorders Chromatopsia, hypsinopsia, retinaldisorders, scotoma, visual disturbances, blurred vision, impaired color vision, blindness

Cardiac disorders Cardiac arrest, thrombosis, myocardial infarction, cardiac arrhythmias, shock, chest pain, hemiplegia, myocardial infarction, ventricular arrhythmia, cardiac arrest, cardiac failure

Vascular disorders Hypotension, thrombosis, venous thromboembolism, arterial thrombosis, cerebral thrombosis, acute renal cortical necrosis, cerebral edema and cerebral infarction, subarachnoid hemorrhage, cerebral ischemia

Respiratory, thoracic and mediastinal disorders Dyspnea, nasal congestion, pulmonary embolism, laryngeal edema and laryngeal spasm, pulmonary complications, pulmonary embolism, pulmonary edema, dyspnea, nasal congestion, cough

Gastrointestinal disorders Abdominal pain, abdominal tenderness and discomfort, nausea, vomiting, diarrhea, gastrointestinal disorders

Hepatobiliary disorders Abnormal liver function tests, jaundice

Skin and subcutaneous tissue disorders Rash, urticaria, pruritus

Musculoskeletal and connective tissue disorders Arthralgia, back pain, muscle cramps, myalgia, muscle weakness, musculoskeletal disorders, back pain

Renal and urinary disorders Renal cortical necrosis, renal failure, urinary retention

General disorders and administration site conditions Fatigue, malaise

OVERDOSE AND TREATMENT

There are limited data on tranexamic acid overdosage. Symptoms may include nausea, vomiting, orthostatic hypotension, and dizziness. Treatment is symptomatic and supportive.

There is no known antidote for tranexamic acid overdose.In case of overdose, hemodialysis is recommended. Hemodialysis is also recommended in renal insufficiency. Activated charcoal may decrease absorption if given within 1 or 2 hours after ingestion.

Intravascular administration of tranexamic acid can cause the urea to protected in the kidneys, which may result in renal cortical necrosis.

Kidney and ureter is blocked in hypotensive episodes in patients with severe vomiting or diarrhea. Clots may form in the urinary tract and cause obstruction of the ureter. If the kidney stretches as necessary. Monitor urine output and maintain adequate diuresis. Clots may form in the urinary tract and cause obstruction of the ureter. If the kidney stretches as necessary. Monitor urine output and maintain adequate diuresis. If prolonged oral intake, anticoagulant therapy should be considered in these patients.

In symptomatic patients, urgent surgical intervention is required to remove clots from the ureter, bladder, pelvis ureteric and/or ureteric ureter and obtain a check may. Obtain an adequate urine output and maintain adequate diuresis.

DRUG INTERACTIONS

For suspected adverse drug reaction, send report to the Philippine Food and Drug Administration, Center for Drug Regulation and Research, Department of Health, Postal Address: FDA Building, 2004 Chemical Road, Filinvest Corporate City, Alabang, Muntinlupa City, Philippines, Telephone Number: 857-1900, Email Address: info@fda.gov.ph, Website: www.fda.gov.ph.

For suspected adverse drug reaction, also send a report to the Philippine Pharmacovigilance Center, Philippine Pharmacovigilance Center, Philippine General Hospital, Telephone Number: 524-0000 local 5301, Email Address: pvc@pgh.gov.ph, Website: www.pvc.pgh.gov.ph.

For more information on safety of this medicine.

DRUG CONDITION

Store at 15°C to 30°C.

Protect from light.

Keep out of the reach of children.

AVAILABILITY

Tranexamic acid (manufactured by Ambernol Laboratories, Philippines)
* Tranexamic acid (Ambernol) 250 mg/Capsule, Box of 100 capsules
* Tranexamic acid (Ambernol) 500 mg/Capsule, Box of 100 capsules

Tranexamic acid (Ambernol) Parenterals, Philippines)
* Tranexamic acid (Ambernol) 100 mg/5 ml, Solution for injection, box of 5 ampoules
* Tranexamic acid (Ambernol) 100 mg/10 ml, Solution for injection, box of 5 ampoules

Manufactured by AMBERNOL LABORATORIES, INC.
Ambernol Compound, Barangay Mamplasan
Biñan, Laguna, Philippines
Tel: (049) 541 0000
Fax: (049) 541 0001 Ext. 2000
Metro Manila, Philippines

*Manufactured by AMBERNOL PARENTERALS, INC.
Via Rosa Tagalog Road
Brgy. Mamplasan, Biñan City, Laguna, Philippines
Tel: (049) 541 0000
Fax: (049) 541 0001 Ext. 2000

Date of First Authorization:
DR-XY6C - Hemostan 250 mg Capsule - 1 August 2007
DRP-3NC - Hemostan 500 mg Capsule, 25 January 2012
DR-XY5C - Hemostan 100 mg/5 ml, 30 August 1999
DR-XY5D - Hemostan 100 mg/10 ml, August 30, September 1999

Trusted Quality Healthcare

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